

PHY4700/9721 Course Outline (Atmospheric Processes)

1. Course Information

Physical processes in the atmosphere will be investigated focussing on the fundamental processes of radiative transfer, conduction, and convection. Examples to be discussed include simple models of the atmospheric thermal structure, ozone and its relations to dynamics, and atmospheric dynamics.

List of Prerequisites for PHY4700

Prerequisite(s): Physics 2101A/B and 2102A/B, Physics 2110A/B.

Unless you have either the requisites for this course or written special permission from the Department Chair or Associate Chairs to enroll in it, you may be removed from this course and it will be deleted from your record. This decision may not be appealed. You will receive no adjustment to your fees in the event that you are dropped from a course for failing to have the necessary prerequisites.

2. Instructor Information

Professor R. Sica

Physics and Astronomy Building Room 312

V: 519/661-3521, F: 519/661-2033, sica@uwo.ca

This course will exclusively use Microsoft Teams for communications

Office hours: Tuesday and Thursday, 10:30-11:30 or by arrangement with the instructor

3. Course Syllabus, Schedule, Delivery Mode

The course objective is to apply some of the basic physical concepts you have learned to understanding Earth and other planetary atmospheres. Outcomes include:

- Appreciating how to apply the basics of thermodynamics to the atmosphere
- Understanding the importance of radiation in an atmosphere
- Developing a “whole air” understanding of atmospheric phenomena beyond what we experience living on the surface.

Contingency plan

Although the intent is for this course to be delivered in person as a lecture course, should any university-declared emergency require some or all of the course to be delivered online, either synchronously or asynchronously, the course will adapt accordingly. The grading scheme will **not** change. Any assessments affected will be conducted online as determined by the course instructor.

4. Course Materials

No textbook is required, but recommended reading will be given and resource books are on reserve in the library and can be viewed through the OWL site.

We will use OWL for grades, announcements, and posting of class materials. *In lieu of email* we will use the class Teams site for student to instructor and student to student communications. Teams allows for more rapid communications; please allow 2 business days for responses to email.

5. Methods of Evaluation

The overall course grade will be calculated as listed below:

Assignments (#)	15%
Midterm Test	40%
Final Exam	45%

The Midterm Exam will be in class and is planned to be given the week of 23 October.

The Department of Physics and Astronomy may, in exceptional cases, adjust the final course marks in order to conform to Departmental policy.

6. Student Absences

If you are unable to meet a course requirement due to illness or other serious circumstances, please follow the procedures below.

Assessments worth less than 10% of the overall course grade:

Late penalties are automatically waived for the first 48 hours after the due date, after which late assignments will be penalized at a rate of up to 10% per day at the instructor's discretion. Weekends count: an assignment due on Friday but submitted on Monday is three days late. In addition, I will drop your lowest assignment grade to account for extended illness or other extended serious circumstance.

Assessments worth 10% or more of the overall course grade:

For work totalling 10% or more of the final course grade, you must provide valid medical or supporting documentation to the Academic Counselling Office of your Faculty of Registration as soon as possible. For further information, please consult the University's medical illness policy at

https://www.uwo.ca/univsec/pdf/academic_policies/appeals/academic_consideration.pdf.

The Student Medical Certificate is available at

https://www.uwo.ca/univsec/pdf/academic_policies/appeals/medicalform.pdf.

Absence from the mid-term will require sitting a make up exam.

Absences from Final Examinations

If you miss the Final Exam, please contact the Academic Counselling office of your Faculty of Registration as soon as you are able to do so. They will assess your eligibility to write the Special Examination (the name given by the University to a makeup Final Exam).

You may also be eligible to write the Special Exam if you are in a “Multiple Exam Situation” (e.g., more than 2 exams in 23-hour period, more than 3 exams in a 47-hour period).

If a student fails to write a scheduled Special Examination, the date of the next Special Examination (if granted) normally will be the scheduled date for the final exam the next time this course is offered. The maximum course load for that term will be reduced by the credit of the course(s) for which the final examination has been deferred. See the Academic Calendar for details (under [Special Examinations](#)).

6. Accommodation and Accessibility

Religious Accommodation

When a course requirement conflicts with a religious holiday that requires an absence from the University or prohibits certain activities, students should request accommodation for their absence in writing at least two weeks prior to the holiday to the course instructor and/or the Academic Counselling office of their Faculty of Registration. Please consult University's list of recognized religious holidays (updated annually) at

<https://multiculturalcalendar.com/ecal/index.php?s=c-univwo>.

Accommodation Policies

Students with disabilities are encouraged to contact Accessible Education, which provides recommendations for accommodation based on medical documentation or psychological and cognitive testing. The policy on Academic Accommodation for Students with Disabilities can be found at:

https://www.uwo.ca/univsec/pdf/academic_policies/appeals/Academic_Accommodation_disabilities.pdf.

7. Academic Policies

The website for Registrarial Services is <http://www.registrar.uwo.ca>.

In accordance with policy,

https://www.uwo.ca/univsec/pdf/policies_procedures/section1/mapp113.pdf,

the centrally administered e-mail account provided to students will be considered the individual's official university e-mail address. It is the responsibility of the account holder to ensure that e-mail received from the University at their official university address is attended to in a timely manner.

You may use a non-programable calculator and bring in your own single sheet of paper with equations on it.

Scholastic offences are taken seriously and students are directed to read the appropriate policy, specifically, the definition of what constitutes a Scholastic Offence, at the following Web site:

http://www.uwo.ca/univsec/pdf/academic_policies/appeals/scholastic_discipline_undergrad.pdf.

In event of a health lock-down, tests and examinations in this course will be conducted using a remote proctoring service. By taking this course, you are consenting to the use of this software and acknowledge that you will be required to provide **personal information** (including some biometric data) and the session will be **recorded**. Completion of this course will require you to have a reliable internet connection and a device that meets the technical requirements for this service. More information about

this remote proctoring service, including technical requirements, is available on Western's Remote Proctoring website at:

<https://remoteproctoring.uwo.ca>.

8. Support Services

Please visit the Science & Basic Medical Sciences Academic Counselling webpage for information on adding/dropping courses, academic considerations for absences, appeals, exam conflicts, and many other academic related matters: <https://www.uwo.ca/sci/counselling/>.

Students who are in emotional/mental distress should refer to Mental Health@Western (<https://uwo.ca/health/>) for a complete list of options about how to obtain help.

Western is committed to reducing incidents of gender-based and sexual violence and providing compassionate support to anyone who has gone through these traumatic events. If you have experienced sexual or gender-based violence (either recently or in the past), you will find information about support services for survivors, including emergency contacts at

https://www.uwo.ca/health/student_support/survivor_support/get-help.html.

To connect with a case manager or set up an appointment, please contact support@uwo.ca.

Please contact the course instructor if you require lecture or printed material in an alternate format or if any other arrangements can make this course more accessible to you. You may also wish to contact Accessible Education at

http://academicsupport.uwo.ca/accessible_education/index.html

if you have any questions regarding accommodations.

Learning-skills counsellors at the Student Development Centre (<https://learning.uwo.ca>) are ready to help you improve your learning skills. They offer presentations on strategies for improving time management, multiple-choice exam preparation/writing, textbook reading, and more. Individual support is offered throughout the Fall/Winter terms in the drop-in Learning Help Centre, and year-round through individual counselling.

Western University is committed to a thriving campus as we deliver our courses in the mixed model of both virtual and face-to-face formats. We encourage you to check out the Digital Student Experience website to manage your academics and well-being: <https://www.uwo.ca/se/digital/>.

Additional student-run support services are offered by the USC, <https://westernusc.ca/services/>.